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CASE OF FRACTURE OF THE THIGH TREATED BY IMMOVABLE APPARATUS OF GYPSUM.

[Read before the Suffolk District Medical Society, Oct. 31st, 1863, and communicated for the Boston Medical and Surgical Journal.]

By JOHN GREEN, ONE OF THE ATTENDING PHYSICIANS AT THE CENTRAL OFFICE OF
THE BOSTON DISPENSARY.

ELISE H., a healthy German child, about two years old, broke the left thigh, about its middle, by a fall out of bed, Sept. 8th, 1863. The limb was shortened about an inch and a half, but was easily restored to the length of its fellow by gentle traction. I immediately applied a starched bandage from the foot as high as the groin, supporting it on the sides by strips of stout pasteboard previously softened by soaking in water. A farther temporary support was given to the apparatus by splints of dry pasteboard, which were allowed to remain until the starch had become dry. For two or three days no shortening was to be detected, but on the fifth day I found that the starch had become softened from dampness, and that the limb was three quarters of an inch shorter than the other. I then slit up the bandage along the front of the thigh and covered it with another roller, applied pretty firmly, while extension was made by an assistant. The whole limb was then covered with plaster mixed with water to the consistence of cream, a second roller was applied over it, and the whole surface smoothed over with a little more plaster and varnished with a solution of shellac in alcohol. The child lay on the back, and any tendency to rotation was checked by blocking the limb on the sides with small sticks of fire-wood. At the end of the third week the apparatus was removed for inspection of the limb, and was renewed as before. At the end of five weeks, the bandage was finally taken off, and the treatment ended; there was no twisting or other distortion, and the shortening was scarcely to be detected, certainly not exceeding one eighth an inch.

[Nov. 3d, eight weeks from the date of the fracture, the walks as easily and as well as before the injury.]

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This case is interesting as illustrating the treatment of fractures of the thigh in young children, and under circumstances unfavorable to the perfect rest demanded by many of the forms of apparatus in common use. The child lay on a mattress upon the floor, and had to be moved several times a day in order to change the bedding under her. This was easily effected by means of a belt placed about the waist, at the same time supporting the broken limb in its plaster case with the other hand. The tendency to shortening was resisted by the conical form of the thigh and of the socket formed by the plaster, just as, after amputation of the thigh, the weight of the body is sustained in the conical socket of a modern artificial limb. To secure this condition, the upper part of the apparatus must be firmly applied to the thigh, and carefully watched to detect any loosening which may occur from the shrinking of the soft parts. Should shortening occur from this cause, the thigh part of the apparatus should be slit up in front, a wedge-shaped strip removed, and the whole re-adjusted by applying a starched roller over it, at the same time that extension is made by an assistant. Another powerful agency, as it seems to me, in preventing the shortening of the limb, is the circular compression of the muscles of the thigh. Of the potency of this action I am convinced from observing its great efficiency after amputation of the thigh in relieving the tension of the soft parts over the end of the bone, and thus preventing its protrusion and the formation of a conical or sugar-loaf stump.

The application of these two principles seems to have been long ago attempted, but with no great success. The most ingenious of these methods is that of Benjamin Gooch, whose apparatus, wrongly attributed to Benjamin Bell, is figured in John Bell's "*Principles of Surgery*." Gooch compressed the muscles of the thigh by means of a large number of thin splints, of an inch or less in width, glued upon thin leather and confined by three or more circular straps and tourniquets. Counter-extension was made from an adjustable ring of metal encircling the upper part of the thigh, but not bearing against the perinæum; this ring was connected by iron rods with a pair of bands placed just above and just below the knee, and the extension effected by means of screws. In this machine, as in the ancient "*glossocomon*," the great and fatal defect was the painful constriction of the limb by rigid bands at a few isolated points, causing the whole member to swell, and thus compelling the speedy relaxation of the extending force for fear of inducing gangrene. In the method now proposed, this danger is avoided by including the whole leg and foot in the plaster apparatus; the plaster case forms an efficient splint, and both the extension and counter-extension are made from large surfaces accurately moulded to the parts, thus acting efficiently and without the confinement and irritation which attend the use of the long side-splint and perineal band. The im-

portant feature in this method, and that in which it differs from the ordinary treatment by the starched or plaster bandage, consists in tightening or renewing the thigh part of the apparatus as often as the shrinkage of the soft parts permits shortening to take place. This, as has already been stated, may be easily effected by cutting out a narrow strip from the front of the case, and tightening it by means of a roller, or better perhaps, in the manner of Mr. Gooch, by straps and twisted tourniquets. The skin, at the part of the thigh corresponding to the slit in the apparatus, may need to be protected by a strip of thin pasteboard, and the plaster may be strengthened, on the outside, to any requisite extent by thin splints of wood or metal. Dextrine may be used instead of plaster, with the advantage of greater neatness with less weight, but plaster has the very great recommendation that it hardens more promptly, is less affected by being wet, and, if varnished, can easily be kept clean, even under the most unfavorable circumstances.

For fractures below the upper third of the femur, I think this method may be made to render good service, at any rate in young children. I should be disposed to try it, also, in the adult, with the addition, perhaps, during a part of the time, of a weight hung to the foot, as practised by Hildanus, and now again somewhat in fashion in this neighborhood.

909 Washington St., Boston, October 31st, 1863.

CANCER OF THE PYLORUS.

[Read before the Suffolk District Medical Society, Oct. 31st, 1863, and communicated for the Boston Medical and Surgical Journal.]

By JOHN HART, M.D., BOSTON.

P. E., age 52, mechanic. Came from Germany about fifteen years ago. Had pneumonia before he came to this country, but enjoyed good health until eight years ago, when he went to the West and there was taken with intermittent fever, which left him again after having returned to Boston. After this his health was apparently good, with the exception of slight dyspepsia and diarrhoea. His habits were regular; would drink beer, but never to any excess; wine never agreed with him, but could drink cider or brandy. He was in the habit of using tobacco to great excess; a pound would last him from ten to fourteen days; he chewed mostly, and swallowed the saliva. He worked in a factory, where he was mostly engaged in lifting and carrying heavy boxes. Was able to work regularly until within a year, when his disease seems to have commenced. He never complained of pain in the stomach, but always experienced a great deal of pressure and weight after meals, particularly after having taken meat, which he usually had to vomit again some hours after eating. Lived mostly on farinaceous diet, sweet or sour

milk and buttermilk. Besides the pressure, he suffered from the accumulation of gases, which caused almost continual eructations. Pyrosis was also at times so excessive that he would have to keep a vessel before him for the reception of the fluid which would flow from his mouth. The bowels were obstinately costive; no defecation except by the use of medicines; the feces were very hard and small. He vomited frequently, but not at regular times after meals; sometimes not for several days, and mostly after having taken meat. His thirst was excessive all the time; drank mostly beer and cider, and milk at his meals, but no tea nor coffee. During this time he emaciated greatly, and was obliged to give up work two or three days during the week.

I first saw the patient Aug. 7th. He then had the appearance of having suffered very much; his skin was sallow, he was very much emaciated, and so feeble that he was hardly able to walk. He complained principally of dyspepsia, distension of the stomach, constipation, eructations of wind and pyrosis. Generally, after two or three days, his stomach would feel very much distended, when he would vomit a very large amount, consisting mostly of water and mucus, which would produce great relief. I ordered milk diet, tonics and laxatives, and the omission of tobacco. The laxative pills gave him some relief, as they slightly moved the bowels, but the tonic tinctures did not agree with him. After this I changed to tonic infusions, with alkaline carbonates. But there was no benefit derived from them, and as I found my directions in regard to diet and the use of tobacco were not observed, I advised him to go to the hospital. He entered the 20th of August and remained till the 30th.

He came under my care again Sept. 7th, with the previous symptoms, but complained also of a burning heat in the region of the stomach and along the cesophagus. He suffered extremely from dyspepsia; the water would almost continually run from his mouth; there were continual eructations, and any kind of food, and even the smallest quantities, would distress him so much that I resorted to beef-tea injections. To move his bowels I ordered Pullnaer mineral water, from which he had at first several defections, but after this it was of no benefit.

Several days after this he vomited a fluid having the color of coffee-grounds, and which amounted to as much as a gallon or more. Twice after this he vomited smaller quantities, and the feces were also mixed with it. After this he apparently improved; his appetite was better, had a defecation almost every day, and soon felt so much better that he could take a very small piece of steak without causing any distress. I endeavored to confine him to milk diet exclusively, but could not succeed. He utterly refused to take sweet milk; buttermilk and cider he drank freely, without causing much distress. The improvement continued but a few days, when he be-

gan to lose his appetite entirely, and emaciated more rapidly than ever. The bowels remained regular, vomiting and pyrosis ceased, as well as the burning sensation about the stomach and œsophagus, but the eructations continued. He had such a disgust for food that he said he would rather die than take any nourishment. He complained at this time of a sinking of his heart, and requested me frequently to order some medicine to strengthen it. The pulse was now very feeble, there was œdema about both ankles and the extremities were very cold. I administered small doses of morphia, which almost instantly relieved the distressing feeling about the heart and stomach.

On percussion, he experienced intense pain just below the sternum, but could not find any dulness about the natural region of the heart. He expired Oct. 3d. His death was very easy, and he remained conscious to the very last.

Dr. Ellis was so kind as to perform the autopsy, of which he gives the following result.

The position of the stomach was changed, the pylorus lying in the median line, about two inches above the umbilicus, fully exposed. The arch of the colon two inches below the umbilicus. The stomach contained thirty cherry-stones and four German prune-stones. Had eaten no cherries for a long time, but had been eating prunes about two or three weeks before his death. On the pylorus, and for a short distance within it, was an elevated irregular growth, deeply ulcerated. The passage was extremely narrow. A superficial microscopic examination showed nothing remarkable, but the portion examined was so far disorganized that structural peculiarities could not be appreciated. The muscular coat of the pyloric portion of the stomach was hypertrophied. Some white opacity of the external membrane of the heart; the heart itself small and shrivelled. Other organs normal.

ON THE PHYSIOLOGICAL PROPERTIES OF NITRO-BENZOLE AND ANILINE.

By HENRY LETHEBY, M.B., F.L.S., &c.

It is on record that Thrasyas, the father of botany, was so skilled in the preparation of drugs that he knew how to compound a poison which would remain for days in the living body without manifesting its action, and would at last kill by a lingering illness. Theophrastus speaks of this poison, and says its force could be so modified as to occasion death in two, three, or six months, or even at the end of a year or two years. The writings of Plutarch, Tacitus, Quintilian and Livy are full of instances of what seem to be this kind of slow and occult poisoning. In fact, until recently there has been a common belief among the unlearned that a skilful poi-

soner could so apportion the dose and combinations of certain subtle agents that he could destroy the life of his victim with certainty, and at the same time measure his allotted moments with the nicest precision, and defy the utmost skill of the physician and the chemist. Even so late as the sixteenth century this belief was shared by the learned of the profession; for we are told, in Sprat's "History of the Royal Society," that among other questions which were drawn up by the earlier Fellows to be submitted to the Chinese and Indians was, "Whether the Indians can so prepare that stupefying herb, *Datura*, that they make it lie several days, months, years, according as they will have it, in a man's body without doing him any hurt, and at the end kill him without missing half an hour's time?"

Modern toxicologists have long since discarded these notions, and have set them down to the vague fears and exaggerated fancies of the ancients, rather than to the sober contemplation of facts. But the account which I am about to give of the physiological properties of nitro-benzole will show that there is one substance, at least, which realizes to a great extent the extraordinary opinions of the ancients. This compound may be given to-day, and yet, if the dose be not too large, it shall not manifest its action until to-morrow or the day after, and then shall destroy life by a lingering illness, which shall not only defy the skill of the physician, but shall also baffle the researches of the medical jurist. These facts are so remarkable that they would be hardly credited if they were not susceptible of the proof of demonstration. They are likewise the more interesting and important from the circumstance that nitro-benzole is now a common article of commerce, and is accessible to every one.

In every manufactory where nitro-benzole and aniline are prepared on a large scale, the peculiar narcotic effects of these poisons are often observed. The vapors escaping into the atmosphere are breathed by the workmen, and cause distressing headache and a heavy, sleepy sensation. For the most part these effects are not serious, but are quickly relieved by fresh air and a mild stimulant, as a glass of brandy and water. Now and then, however, the workmen, from carelessness in their habits, expose themselves to the action of comparatively large quantities of these poisons, and then the effects are most dangerous. Two fatal cases of poisoning by nitro-benzole have been referred to me by the coroner for investigation during the last two years, and in both instances they were the results of careless manipulation. In one case, a man, 43 years of age, spilt a quantity of the liquid over the front of his clothes, and he went about for several hours in an atmosphere saturated with the poison. In the other, a boy, aged 17 years, received a little of the liquid into his mouth while sucking at a siphon. The effects were nearly the same in both cases, notwithstanding that in

one the poison was inhaled, and in the other it was swallowed. For some time there was no feeling of discomfort above that of drowsiness; gradually, however, the face became flushed, the expression stupid, and the gait unsteady—the sufferers had the appearance of persons who had been drinking. Little by little this stupor increased, until it passed into profound coma, and in this condition they died. The progress of each case was much the same as that of slow intoxication, excepting that the mind was perfectly clear until the coming on of the fatal coma. This was sudden, like a fit of apoplexy; and from that moment there was no return of consciousness or of bodily power—the sufferer lay as if in a deep sleep, and died without a struggle. The duration of each case was nearly the same; about four hours elapsed from the time of taking or inhaling the poison to the setting in of the coma, and the coma lasted for about five hours.

After death there were no appearances of convulsions, but rather of narcotism and apoplexy. The face was flushed; the lips were livid; the superficial vessels of the body, especially about the throat and arms, were gorged with blood; the dependent parts were turgid; the blood was everywhere black and fluid; the lungs were somewhat congested; the cavities of the heart were full; the liver was of a purple color, and the gall-bladder distended with bile; the brain and its membranes were turgid, and in the case of the man there was much bloody serosity in the ventricles. Analysis discovered the existence of nitro-benzole in the brain and stomach, and also of aniline.

These effects were so remarkable, that I determined to examine them still further by experiments on domestic animals. Dogs and cats were submitted to the action of from thirty to sixty drops of nitro-benzole which had been well washed with dilute sulphuric acid and water to free it from every trace of aniline. The poison was generally administered by pouring it into the mouths of the animals, but sometimes it was given by means of an œsophagus-tube. When the nitro-benzole had come into contact with the mouth, it always caused discomfort, as if from unpleasant taste, and there was profuse salivation. Its local action on the stomach, however, was never very great, for there was rarely any vomiting until the setting in of nervous symptoms, and this seemed to be due to sympathy rather than to any local irritation of the stomach. Two classes of effects were clearly observed; there was either the rapid coma which characterized the operation of the poison on the human subject, or there was a slow setting in of paralysis and coma, after a long period of inaction.

When the effects were speedily fatal, the animal was soon seized with giddiness and an inability to walk. The weakness of the limbs first appeared in the hind extremities, and was manifested by a difficulty in standing; but very soon it extended to the fore legs, and

then to the head and neck. There was complete loss of voluntary power. The animal lay upon its side, with its head drawn a little back, and with its limbs in constant motion, as if in the act of walking or running. The muscles of the back were occasionally fixed in spasm, and every now and then the animal would have a sort of epileptic fit. It would look distressed, would howl as if in pain, and would struggle violently. After this it would seem exhausted, and would lie powerless. The pupils were widely dilated, the heart's action was tumultuous and irregular, and the breathing was somewhat difficult. For some time, however, the animal retained its consciousness, for it would look up, and wag its tail when spoken to; but suddenly, and often at the close of a fit, it would become comatose—the eye would remain open, but the conjunctiva would be insensible to touch, and the movements of the limbs would nearly cease; the breathing would be slow and somewhat stertorous, and the animal would appear as if it were in a deep sleep. This condition would last until it died—the time of death varying from twenty-five minutes to twelve hours after the administration of the poison.

When the action of the poison was slower, there was often no visible effect for hours or days. At first there was always a little discomfort from the taste of the poison, but this soon subsided, and then for a day or more the animal appeared to be in perfect health. It would go about as usual, would be quite lively in its movements, would eat its food heartily, and in fact would seem to be in no way affected by the poison. Suddenly, however, it would look distressed, it would have an attack of vomiting, and it would tumble over in an epileptic fit. When this had subsided, it was generally found that the animal was weak, or even quite paralyzed in its hind extremities; and after two or three of such attacks, the loss of voluntary power would extend to the fore limbs. The animal would lie upon its side perfectly helpless, and then the progress of the case was much the same as that already described, except that it was considerably slower. Consciousness, for example, would be retained for several days after the animal was paralyzed, and, although it was quite unable to stand, it would take food and drink when they were put into its mouth. The condition in which it lay was most distressing; the look was anxious and full of fear; the limbs were in constant motion; and every now and then there would be a violent struggle, as if the animal was in a fit, or was making fruitless efforts to rise. This would last for days, and then there would be either a gradual restoration of voluntary power, with complete recovery, or death from exhaustion. The time that elapsed from the administration of the poison to the coming on of the first symptoms, namely, the epileptic fit, varied from nineteen hours to seventy-two; in most cases it was about two days, and the time of death was from four to nine days.

The *post-mortem* appearances were nearly the same in all cases,

whether the death was quick or slow. The vessels of the brain and its membranes were extremely turgid; the cavities of the heart were full of blood; the lungs were but slightly congested; the liver was of a deep purple tint, and the gall-bladder distended with bile; the stomach was natural, without sign of local irritation; and the blood all over the body was black and uncoagulated. Whenever the progress of the case had been quick, and death had taken place within twenty-four hours, the odor of the nitro-benzole was clearly perceptible in the stomach, the brain and the lungs; and there was always unmistakable evidence of the existence of aniline in the organs of the body. In the slower cases, the odor of the poison had often entirely disappeared; but generally there were distinct traces of aniline in the brain and urine, and sometimes in the stomach and liver; occasionally, however, no poison was found.

It has appeared to me that the facts which are here elucidated are very remarkable; for they not only indicate a rare circumstance in toxicology, namely, that a poison may be retained in the system for many days without showing its effects, but also that the poison may be changed into an entirely different substance. The importance of these facts cannot be over-rated; they are alike interesting to the chemist, the physiologist, and the medical jurist; for without dwelling on a very possible occurrence—namely, the criminal administration of this poison, with the knowledge that the effects would be delayed, that the symptoms would correspond to those of natural disease, that the progress of the case would be lingering, and that there would be either no discovery of poison in the body, or the discovery of a thing different from that administered—it will be manifest that the study of these facts by the medical jurist is of public importance. To the physiologist they are also interesting, inasmuch as they indicate a reducing power in the animal body by the conversion of nitro-benzole into aniline. I have endeavored to ascertain whether this is due to a living or a dead process. In the first place, I find that dead and decomposed organic matter will effect the change alluded to; for when nitro-benzole is placed in the dead stomach, or is kept in contact with putrid flesh for several hours, there is a partial reduction of it into aniline. This may be the source of the poison found in the dead body; but, on the other hand, there is a great similarity in the physiological effects of nitro-benzole and those of aniline.

When aniline is given to dogs and cats in doses of from twenty to sixty drops, it causes rapid loss of voluntary power. The animal staggers in its gait, looks perplexed, and falls upon its side powerless. Its head is drawn back, the pupils are widely dilated, there are slight twitchings or spasms of the muscles, the breathing is difficult, the action of the heart tumultuous, and the animal quickly passes into a state of coma. From this it never recovers, but remains upon its side as if in a deep sleep, and so dies in from half an hour to thirty-two hours.

The *post-mortem* appearances are much the same as the last: the brain and its membranes are turgid, the cavities of the heart are nearly full of blood, the lungs are but slightly congested, and the blood all over the body is black and uncoagulated. In every case the poison was easily discovered in the brain, the stomach and the liver.

While, however, there seems to be a probable conversion of nitro-benzole into aniline in the living animal body by a process of reduction, there is also undoubtedly a change of an opposite character going on upon the surface of the body, whereby the salts of aniline are oxidized and converted into *mauve* or *magenta* purple. Some remarkable facts illustrative of this have been brought under my own notice, and have been the subject of clinical observation.

In the month of June, 1861, a boy, aged 16, was brought into the London Hospital in a semi-comatose condition. He had been scrubbing out the inside of an aniline vat, and while so doing he breathed an atmosphere charged with the vapor of the alkali, and became insensible. He did not suffer pain or discomfort, but was suddenly seized with giddiness and insensibility. When he was brought to the hospital he looked like a person in the last stage of intoxication; the face and surface of the body were cold, the pulse was slow and almost imperceptible, the action of the heart was feeble, and the breathing was heavy and laborious. After rallying a little, he complained of pain in the head and giddiness. It was then noticed that the face had a purple hue, and that the lips and lining membrane of the mouth and nails had the same purple tint. The next day, although the narcotic effects of the poison had passed away, he was still remarkably blue, like a patient in the last stage of cholera.

In the early part of last year, sulphate of aniline was given in rather large doses to patients in the London Hospital affected with chorea. The doses ranged from a quarter of a grain to seven grains. They were frequently administered, so that large quantities of the salt were taken in a very short time. In one case as much as 406 grains were taken in the course of a few days. No very remarkable effects followed beyond this, but after a few doses had been taken, and the system had become, as it were, saturated with the salt, the face became of a leaden-blue color, the lips and gums looked as if the patients had been eating black currants, and the nails also acquired a purple hue. The color faded a little before the time came for the administration of another dose, but soon after taking it, it appeared again; and this was the subject of constant observation. Dr. Fraser and Dr. Davies have recorded the results of their experience in five cases,* from which it would seem that although the free alkali is a powerful poison, the sulphate of it has but little action upon the animal body.

* Medical Times and Gazette, March 8, 1862, p. 339.

The general conclusions which appear to me to be warranted by these investigations are :—

1st. That nitro-benzole and aniline in its free state are powerful narcotic poisons.

2d. That they exert but little action, as local irritants, on the stomach and bowels.

3d. That although the effects may be quick, and the fatal termination of them rapid, yet nitro-benzole may remain in the system a long time without manifesting its action.

4th. That the salts of aniline are not nearly so poisonous as the free alkali.

5th. That in rapid cases of fatal poisoning, both the poisons are readily discovered in the dead body.

6th. That in slow cases the poison may be entirely changed or eliminated, and therefore not recognizable.

7th. That both of the poisons appear to be changed in the body by processes of oxidation and reduction, nitro-benzole being changed into aniline, and aniline and its salts into mauve or magenta.

In an appendix* are given notes of the two cases of fatal poisoning by nitro-benzole referred to in the paper, and a detailed account of twelve experiments on animals with nitro-benzole, and three with aniline; also the process employed for the recognition of aniline and nitro-benzole in the dead body, as follows :—

1st. The matters to be analyzed were bruised in a mortar with a little water, and very slightly acidulated with dilute sulphuric acid.

2d. They were then submitted to distillation in a glass retort—the distilled products being saved in three or four separate portions by changing the receiver at different stages of the process. In this way the presence of nitro-benzole was discovered.

3d. The residue in the retort, when reduced to a pulpy mass by the distillation, was treated with strong spirit of wine and filtered.

4th. The filtered alcohol solution which contained the aniline was treated with a slight excess of subacetate of lead, and again filtered. In this way gum, dextrine, &c., were removed.

5th. The filtered solution was treated with a slight excess of a saturated solution of sulphate of soda in water. In this manner the excess of lead was precipitated as a sulphate.

6th. The clear solution was then made very alkaline with caustic potash, and distilled to dryness from an oil-bath. The aniline, together with ammonia from the animal matters, was found in the clear, colorless, distilled spirit.

7th. This was neutralized, or rather made acid, with a slight excess of dilute sulphuric acid, and evaporated nearly to dryness in a white porcelain dish. If necessary, the spirit was saved by distillation.

* Preserved in the Archives.

8th. The residue was of a pinkish color if aniline was present, and occasionally there were little streaks of blue around the edges of the white porcelain dish. If the quantity of the saline residue was not more than a grain or so, it was at once tested by dissolving it in a few drops, or even in a single drop, of dilute sulphuric acid (1 to 1). A small portion of it was then placed upon a strip of bright platinum; and the platinum having been connected with the positive pole of a single cell of Grove's battery, the liquid was touched with the negative pole: in a few seconds, if aniline was present, the liquid would acquire a bronze, a blue, or a pink color; the kind of color being dependent on the amount of aniline present—bronze being the result of much aniline, and pink of a very little. In this way at least one two-thousandth part of a grain of aniline was easily recognized.

To another portion of the acid liquid placed upon a white porcelain plate, a little peroxide of lead or red prussiate of potash was added, and a blue or purple reaction followed. This test is not so delicate as the last, for it fails when the amount of aniline is less than the one-thousandth of a grain.

Other tests may be resorted to if necessary, as when the quantity of aniline is large. Thus peroxide of manganese or bichromate of potash may be used in the same way as the red prussiate of potash in the last experiment; but these tests will not answer with less than the one five-hundredth part of a grain of aniline. Lastly, a drop of a solution of chloride of lime may be added to the acid liquid, and if the quantity of aniline exceeds the hundredth part of a grain it will cause a purple reaction.

9th. If the quantity of saline residue from the last operation is large, and there is reason to believe that much ammonia is present, this alkali must be got rid of, for it greatly interferes with the success of the color-experiments. The residue, therefore, is made moist with water, and rubbed down with about twice its bulk of neutral carbonate of soda. It is then exposed to the air for a short time until the color of the ammonia has passed away. It is then treated with strong alcohol, filtered, acidulated with dilute sulphuric acid, and again evaporated. The aniline is now fit for the color-experiments.

There are no fallacies to these experiments; for, although, as I have elsewhere shown, strychnia will give nearly the same color-reactions, yet in the first place this alkali is not volatile like aniline, and will not, therefore, distil over as the latter does; and in the next place, while the best effects, in respect of color, are developed with dilute acid and aniline, strychnia requires the concentrated acid. These differences are sufficient to prevent any embarrassment as regards the two alkaloids.—*Lond. Pharm. Journal*, Sept., 1863.

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

OCT. 26th.—*Softening and Fatty Degeneration of the Heart; sudden Death.* Dr. ELLIS showed the specimen.

The patient, 45 years of age, was subject to gout and rheumatism. For four years or more he had been liable to dyspnoea, palpitation, pain in the cardiac region, and occasionally down the arms. During the last four months of his life these attacks became more severe. While walking with a friend, he would often stop and complain of pain, dyspnoea and irregular action of the heart.

While seated at the tea-table, on June 15th, after eating very moderately, he complained of feeling unwell, and retired to a neighboring room, where a member of the family found him shortly after, in great distress. According to one statement, there was some frothing at the mouth and a convulsion, but nothing of the kind was noticed by Dr. Morrill Wyman, who soon arrived. At that time, 10, P.M., the patient was pulseless, with cold hands and feet. The forehead was bathed in perspiration. The countenance was pale, the mind clear. Complaint was made of a feeling of oppression at the upper part of the sternum, and of dyspnoea. The respiration was "groaning and sighing." No pulse could be felt in the groin, nor was any pulsation of the heart perceived by the hand or ear. Though able to swallow brandy and ammonia, he did not revive, and died suddenly at 1½, A.M.

Autopsy, 16 hours after death. The adipose tissue was abundant. The heart was flaccid, and filled with liquid and much recently coagulated blood. The substance was of a pale-red color, and more friable than usual, breaking down easily under pressure and traction. In some portions, particularly at the upper part of the anterior wall of the right ventricle, the adipose tissue had apparently encroached upon the muscular. Some isolated points of adipose tissue were also seen. Quite a limited portion was white, shining and fibrous.

On microscopic examination, many of the transverse striæ were found indistinct or invisible, and some of the fibres contained minute globules. Free fat and minute portions of adipose tissue were also seen. The stomach contained some ingesta. The other organs were normal.

OCT. 26th.—*Fatty Degeneration and Rupture of the Heart.*—Dr. ELLIS showed a heart which he had removed from a patient of Dr. GAY, an old gentleman, who fell in the street, and died a few hours after being carried home.

The adipose tissue was everywhere abundant. The pericardium was filled with a recent blackish coagulum. The heart was flaccid, of a light-red color, soft and easily torn. The external adipose layer had not only encroached upon the muscular substance, but points of the same were seen imbedded in the latter. The substitution of fat for muscle was most marked at the upper part of the anterior wall of the right ventricle.

Just beneath the anterior fold of the mitral valve was a perforation, as large as a goose quill externally, but much larger internally, where the rough appearance of the tissue indicated recent rupture.

On microscopic examination, many of the fibres were pale, indistinct and homogeneous, owing to the great obscurity or disappearance of the transverse striæ. In some, minute globules were seen. Other portions contained well-marked adipose tissue. The aorta was examined as far down as the iliacs. Its inner surface was everywhere roughened by atheromatous deposits, cretaceous plates, or superficial excavations resulting from the destruction of the former. The cortical substance of the kidneys was thin and granular. The other organs were sufficiently healthy.

Portions of the hearts in this case and the preceding were examined by Dr. Jeffries Wyman, without a knowledge of the disease suspected, and he arrived at the same general results. There can, therefore, be no reasonable doubt that death was directly caused by the change in the muscular tissue.

Dr. MIXOT said that he had shown a specimen of rupture of the heart to the Society more than two years ago. The patient was a woman, 76 years old, who, while conversing with a friend, fell, and died immediately. A year previously she had an attack of hemiplegia, with loss of speech, from which she had nearly recovered. At the autopsy, about eight ounces of blood were found in the pericardium, which came from a small rent in the left ventricle, near the interventricular septum. Dr. Ellis had examined the specimen microscopically, and had found the parts near the rupture to be the seat of fatty deposit.

OCT. 26th.—*Malignant Disease of the Testicle.* Dr. CLARK showed the specimen, which he had removed from a man, 31 years old, a machinist by trade, who had received a blow on the part a year ago, from the corner of a falling iron casting. He had severe pain in the testicle for half an hour after the accident, but for the six months following felt no uneasiness in the part. Six months ago, however, the patient noticed an enlargement of the right testicle, with pain, and these symptoms increased until he entered the Hospital, when the testicle was enlarged to the size of a large orange, was hard and unyielding. The scrotum was covered with a network of engorged veins. The disease proved, on examination, to be unquestionably malignant.

Dr. ELLIS said he had examined, microscopically, a portion of the tumor, consisting of a soft, dull-white material, containing much milky fluid, and irregular, yellow lines or masses. The first contained variously-shaped cells, with large nuclei and nucleoli, such as are most frequently found in malignant growths. Many of the nuclei contained several irregular nucleoli. In the yellow portions, fatty degeneration had taken place.

Dr. CLARK remarked that the case was interesting as one of apparent development of malignant disease from injury.

Dr. JACKSON had seen some striking instances of this. He once examined the body of a sailor who entered the Chelsea Marine Hospital, under Dr. Stedman's care, with cancerous disease of the testicle, which appeared two months after he had received a blow on the part. The man had been perfectly healthy previously, and yet at the autopsy cancer was found in almost every part of the body.

OCT. 26th.—*Tumor from the Roof of the Mouth.*—Dr. CAROT showed a small round tumor, which he had removed from the roof of the mouth of a soldier. It had existed for eighteen months. It was situated on the posterior and left part of the hard palate, extending as far as, but not

involving the gum. Although the patient had suffered severe pain in the left side of the face and temple, of a neuralgic character, yet he was not sure that it had its origin in the tumor. It was somewhat tender on pressure, but not painful. The capsule which contained it being incised, it was easily shelled out. It was two thirds of an inch in diameter, of a yellowish-white color, and mostly smooth, but in one part it had a warty appearance.

Dr. ELLIS said that no lobules smaller than those seen by the naked eye were noticed by him under the microscope. It was composed of delicate fibroid tissue and cells of moderate size, round, fusiform and variously elongated, with distinct nuclei and nucleoli, not remarkable for their size. There were also free nuclei. The gross appearances were benign, but the microscopic appearances were suspicious.

Nov. 9th.—Dr. ELLIS read a communication from Dr. John Homans, Jr., U.S.A., Surgeon of St. James's Hospital, New Orleans, containing an account of the following cases:—

I. *Fibrinous Cast from the Urethra*.—The patient, a private in the Massachusetts Battery, entered the Hospital Feb. 20th, in an excited and anxious state of mind, on account of a long mass of lymph which was protruding from his urethra. He had had a discharge from the part three weeks after connection with a prostitute, for which he used an injection of two grains of chloride of zinc to an ounce of water. This caused considerable, but not severe pain, and he had continued it for five days, when the mass suddenly began to protrude from the meatus. By gentle traction seven and a half inches of a cast of the urethra were drawn out, when it broke off. It was of a greyish color, and completely tubular. On being cut open, it was lined with a distinct, smooth and shining membrane, which was in longitudinal folds, on either side of a smooth central tract. The cast was examined by Dr. Riddel, of New Orleans, and showed no epithelial cells, but simply amorphous or granular matter. The patient was discharged, well, April 1st.

Dr. ELLIS showed the specimen, which, he remarked, showed no evident traces of mucous or fibrous tissue, though there were some doubtful appearances of fibre and cellular tissue. It was probably a real slough.

II. *Cancer of the Eye*.—The patient was a private in the 1st Louisiana Vols., a German, who had always enjoyed good health. There was no similar disease known in his family or ancestors, so far as known. In December last, the left eye became inflamed and very painful. Soon afterwards it began to enlarge, and when seen by Dr. Homans it was of the size of a horse-chestnut. The humors had not been discharged, and there was much vascularity, hypertrophy and engorgement of the conjunctiva. The bones of the orbit were not affected.

The eyeball was removed by the knife and curved scissors, together with the entire contents of the socket. The bleeding, which was free, was controlled by a compress and bandage.

The tumor was encephaloid, softened in the centre to a red, grumous, semi-fluid consistence, and very vascular. Under the microscope the appearances were those of malignant growths, with some progress towards fatty degeneration.

III. *Compound Fracture of the Skull*.—The patient was brought into

the hospital with his face and clothes covered with blood. There was a compound fracture of the skull in the right parieto-temporal region, with considerable depression over a space a little larger than a silver dollar. Some hæmorrhage still continued. He was partially stupid, and talked incoherently. Pulse fair; pupils dilated. The wound was probably produced by a heavy blunt instrument, as a hammer or club. The patient having been etherized, the scalp was freely cut open, and portions of bone were removed, the largest being about an inch square. The thin bone of the temporal portion of the skull was found to be depressed, and was raised by means of an elevator. There was considerable hæmorrhage. Water dressing was applied. Four days after the operation he had epileptiform convulsions, but with this exception he steadily progressed to recovery, and in six weeks the wound was all but healed.

IV., *General Emphysema from Necrosis of the Ribs.*—A private in the 114th New York Reg't entered the Hospital Dec. 30th, and was treated for chronic diarrhœa; he also had necrosis of the tibia. On the 13th of February he came under Dr. Homans's care, with advanced phthisis. He went on without any rapid change till March 29th, when he began to have emphysema in the right side of the back, which extended very rapidly, and then went over to the left side, till the whole of the upper part of his body was puffed up like a balloon. The air extended down to the wrists, and even beneath the integuments of his fingers. The eyelids were so inflated that his eyes were closed. The emphysema stopped short at the thighs; there was no air beneath the integuments below the pelvis, except in the scrotum, which resembled a very thin bladder distended with air. He died March 7th.

At the autopsy, the right lung was found entirely filled with softened tubercles and cavities. The third, fourth and fifth ribs of the right side were more or less necrosed, and some spicula of bone were observed. There were two openings from the lung to the external surface of the chest, beneath the skin; one, through the posterior wall, beneath the right scapula, which was also necrosed, and another near the junction of the third rib with its sternal cartilage.

The liver was fatty, and contained a few tubercles. The spleen was large, and filled with tubercles. The mesenteric glands and intestines were also somewhat tuberculous.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, NOVEMBER 19, 1863.

THE LONDON LANCET AND THE PHYSICIANS OF NORFOLK.—The *London Lancet*, in a recent article entitled "Federal Foul Blows," rolls up its saintly eyes and raises its holy hands in a paroxysm of horror, at the recent action of the Federal Government, by which the physicians of Norfolk, Va., were obliged to take out the usual license required of all practising physicians, and in addition to take the oath of allegiance to the Government of the United States, as a condition of being allowed to pursue their professional avocations. Indeed, so shocked and

overwhelmed is that virtuous journal at the enormity of this requirement, that it cannot refrain from exclaiming, "Thank Heaven! our arms have never been disgraced by such cold-blooded cruelty." Blowing Sepoys from the mouths of cannon is nothing to it, of course. Speaking of the general character of the war, it says that it "seems to be dragging within its vortex, and destroying, all those decent considerations which distinguish civilized war from the gloating blood-thirstiness of the vindictive savage; at least so far as concerns one of the contending parties." It is plain enough to which of the contending parties this writer refers. In fact, the general malignancy and one-sidedness of the whole article would do justice to the *London Times* itself. But a word with regard to the special act which has called down upon our country such an outpouring of wrath.

The *Lancet* may not be aware that Norfolk is within the legitimate bounds of the territory of the United States. Temporarily and unnecessarily surrendered into the hands of the secessionists at the beginning of the rebellion, it was recovered more than a year and a half ago, and has since been held by the forces of the Government. The various municipal functions have been administered during that time under the authority of the United States; and by the law of conquest, if no other (supposing it to have been at any time properly under the authority of any other government), it is now as much within the scope of the laws of the United States as New York is. Now every physician in the country must pay his annual license tax or suffer the penalty. Very justly, all suspected and dangerous persons anywhere within the military line are liable to be called on to clear themselves from suspicion by taking the oath of allegiance. The secessionists of Norfolk, we happen to know, have been of a particularly aggravating and rancorous class. It is not long since one of them, and a physician, too, suffered the extreme penalty of the law for murdering a United States officer while in the discharge of his duty. There must have been special reasons for requiring the oath of allegiance of late; perhaps they may have grown out of a sense of insecurity caused by the withdrawal of most of our troops in that vicinity, and rumors which have been current of a purpose to attempt to wrest the city from the hands of the Government. We fully agree that when hostile armies meet, surgeons should be regarded as non-combatants; it would be a slightly redeeming feature in the course which the Southern rebels have pursued, if they had acted up to this principle, especially after avowing their purpose to do so. More than eighty of our surgeons starving in the prisons of Richmond at the present time, are a standing proof how much this principle of humanity or respect for their pledged word is valued by their chivalrous captors. Time would fail us to recount the gratuitous cruelties to which wounded prisoners have been subjected by the rebels, or the harsh treatment which our surgeons have received. We refer any one wishing for information on this subject, to the report of Surgeon John Swinburne to Surgeon-General Hammond on his experiences in the Peninsula Campaign, published in the Transactions of the New York State Medical Society for the current year.

So recently as the battle of Chicamauga we have abundant evidence of the same want of common humanity and regard for the usages of

war. We take the following extract from the *Sanitary Commission Bulletin* of November 1st :—

"On Tuesday, the 29th ult., and on Thursday, the 1st inst., ambulance trains were despatched to the field for our wounded left in the hands of the enemy. All who were severely wounded were paroled and brought in—those more slightly wounded being reserved for regular exchange, via Richmond. The men are uniform in their testimony as to the neglect and consequent suffering they experienced. Officers and men, including the surgeons who remained to take care of the wounded, were, in almost all cases, deprived of their blankets, overcoats, and in many instances shoes and other wearing apparel; they were robbed of the contents of their pockets—'greenbacks' being especially sought after. The food left for their subsistence was taken from them, and corn-meal and water furnished in its stead. They likewise suffered greatly from the impossibility of having their wounds properly attended to—the rebels having taken from our surgeons the greater portion of the appliances left for them—including instruments and bandages. The ambulances sent with a flag of truce for the wounded, ten days after the battle, and delivered into the hands of the enemy at their lines, were returned robbed of everything movable, and in many cases broken-down horses substituted for those sent out. These matters are referred to as affording another instance of the chivalrous character of our foe and the manner in which he *practises* the amenities of war, of which none better than he can *speak*."

These cruelties, it must be remembered, were practised on the field of battle, where there was no redress. At Norfolk the circumstances under which a necessary severity was exercised were quite otherwise. Fully one half of the physicians there resident were ready to comply with the requirements of the authorities, and the Mayor, by public notice in the newspapers, invited loyal members of the profession to fill up the places made vacant by the nonconformists. Situated as Norfolk is, the physician who refuses submission to the laws of the United States becomes at once an open enemy, and has no right to claim the immunity of a noncombatant, which he thus defiantly casts from him. It must be evident to any one, with two ideas in his head, that a physician in such a place, circulating among all classes, going and coming at all hours, passing beyond the military lines on professional errands, must be above suspicion. So long, therefore, as treason is recognized as a crime, and is felt, as this country now feels it to be, one of the blackest dye, such tirades as that of the *London Lancet* are little better than the meanest Pharisaism and hypocrisy.

The *Lancet* is greatly exercised also by the conduct of the Federals at Williamsburg, after the retreat of the rebels from that place during McClellan's advance upon Richmond. We quote from that Journal as follows :—

"We add another relation to prove that it is not without good cause we protest against a kind of warfare which no Government claiming to be recognized amongst Christian nations has a right to practise :—

"The State of Virginia has an insane asylum at Williamsburg. When that town fell into the hands of the Federals there were 300 lunatics in the asylum. The physicians, keepers and nurses were driven away, and the friends of the inmates forbidden to see or minister to them. The institution was placed under military rule, and the management assigned to army surgeons, with common soldiers for nurses; and word was sent that if any attack were made the poor lunatics would be turned out and sent to Richmond, where was neither room nor accommodation for them.

"Comment on such proceedings is superfluous. Whoever does such deeds as these, or sanctions their being done, is a common enemy to humanity, disgracing alike the calling of the soldier and the dignity of the man."

Now the simple truth is this. The day after the rebels left Williamsburg, abandoning everything to the Federals, they were in hasty retreat towards Richmond. The town was as quiet, to use the words of our informant who was there at the time, as a country village. The inmates of the hospital were tenderly cared for by the military authorities, and the rebel wounded left behind were supplied with comforts which they could not otherwise have obtained. At a subsequent period, when the small force left in charge of this place was obliged to evacuate it before a superior one under the rebel General Wise, the attendants in the hospital, who remained behind to fall into the hands of the enemy rather than desert their charge, were made prisoners, and the inmates were actually supplied with the necessaries of life sent back to Williamsburg by our own forces, by permission of the rebel commander! So much for the veracious *Lancet*. Verily it has reason to thank Heaven that its countrymen are not as other men are!

NEW HAMPSHIRE MEDICAL INSTITUTION.—The annual commencement of this Institution took place on Friday, Oct. 30th, 1863, at which the degree of Doctor of Medicine was conferred on the following gentlemen, viz. :—

NAMES AND RESIDENCE.	THESES.
Samuel Fogg Bachelier, Loudon, N. H.	<i>Tubæ Mesenterica.</i>
Henry Luzerne Bartholomew, Quincy, Ill.,	<i>Diarrhœa.</i>
Wm. Henry Bowen, North Scituate, R. I.,	<i>Ergot.</i>
Wm. Augustus Butts, New Portland, Me.,	<i>Erysipelas.</i>
Henry Melville Chase, Lyme, N. H.,	<i>Typhoid Fever.</i>
Mark Hubbard Corwin, Chelsea, Vt.,	<i>Pneumonia.</i>
Orris Orange Davis, Brookfield, Vt.,	<i>Dysentery.</i>
Levi Parker Dodge, New London, N. H.,	<i>Typhoid Fever.</i>
Richard Henry Green, A.B., Bennington, Vt.,	" "
John Milton Grosvenor, Danvers, Mass.,	" "
George Dexter Harris, Canaan, N. H.,	<i>Inflammation of the Joints.</i>
Alpheus Enos Hoyt, Framingham, Mass.,	<i>Extra-uterine Fœtation.</i>
Stephen Bartlett Kenney, Portland, Me.,	<i>Upon the Mode of Pursuing the Study of Medicine.</i>
Charles Little, A.B., West Boscawen, N. H.,	<i>Digestion.</i>
Lewis Gould Lowe, A.M., Bridgewater, Ms.,	<i>Chemistry and Medicine.</i>
Charles Augustine McQuesten, Bangor, Me.,	<i>Camp Dysentery.</i>
Ephraim Carlos Meriam, Merrimac, N. H.,	<i>Croup.</i>
La Roy Frederick Morse, Canterbury, N. H.,	<i>Duties of the Accoucheur in Natural Labor.</i>
Henry Clay Newell, A.B., St. Johnsbury, Vt.,	<i>Remittent Fever.</i>
Andrew Mitchell Peables, Auburn, Me.,	<i>Hygiene.</i>
Walter Scott Robinson, Weathersfield, Vt.,	<i>Typhoid Fever.</i>
Moses Wadleigh Russell, Sutton, N. H.,	<i>Chronic Gastritis.</i>
Ira Cole Sawyer, Hiram, Me.,	<i>Diarrhœa.</i>
Atwell William Swett, Hampden, Me.,	<i>Miasmatic Fevers.</i>
Charles William Thomas, Hampden, Me.,	<i>Veratrum Viride.</i>
Charles Oscar Towne, West Lebanon, N. H.,	<i>Phthisis Pulmonalis.</i>
Arthur Hervev Wilson, Rutland, Mass.,	<i>Hygiene.</i>

The Faculty of this Institution have adopted the New Haven rule of admitting Bachelor of Arts to an examination for degrees after two years study.

ALBERT SMITH, *Secretary.*

[We cannot refrain from remarking that the New Haven rule referred to is, in our opinion, a very bad one, and "more honored in the breach than in the observance." It is unjust to other medical colleges

and to the profession at large. Graduates of such an institution ought not to be admitted *ad eundem* by our State Medical Society, and we hope the American Medical Association will take speedy cognizance of a system tending so directly to lower the standard of professional education.—EDITORS.]

THE LATE DR. ADAMS MOORE.—Died, in Littleton, N. H., on the 5th of November, 1863, Adams Moore, M.D., aged 64 years. He was a man of great social, moral, and professional worth, and his death is deeply felt, by a large circle of friends, and by the community where he resided. He originated in Bedford, N. H., and was graduated at Dartmouth College, in the year 1822. At a subsequent period he officiated, for a year or more, as tutor in that institution; but scientific and professional pursuits engaged his principal attention the remainder of his life. Having completed the requisite term of the study of medicine, with his teacher, the venerable Dr. Burns, of Littleton, and having practised a short period in Lowell, Mass., he finally settled in Littleton, and, to the day of his death, remained on the most friendly terms with the man who taught him, and who now lives to mourn his loss. Being a sober, discreet, and careful practitioner, his patients felt full confidence in his prescriptions. Possessing a modest, and somewhat retiring disposition, the real basis of his distinction was true merit, which all who knew him were ready to concede to him. His patriotism gave to his country's service, in her present struggle, a promising son, who, though yet a minor, died a brave and valuable officer on the field of battle. The settlement and early history of his adopted town became a matter of interest to him, and he accumulated the materials for an extended work on that subject, which his friends had hoped to see forthcoming at no distant period. Talents, industry, perseverance, fidelity, conscientiousness, morality, liberality, with all the social and domestic virtues, have endeared him to all who knew him. E. C.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, NOVEMBER 14th, 1863.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	42	46	88
Ave. mortality of corresponding weeks for ten years, 1853—1863,	34.2	36.5	70.7
Average corrected to increased population	00	00	77.46
Death of persons above 90	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Chol. Infan.
16	8	0	5	0	0	3	2

MARRIED,—In Dedham, Nov. 12th, Courtland Hoppin, M.D., of Providence, R. I., to Mary Frances, daughter of Joseph W. Clark, of Dedham.

DEATHS IN BOSTON for the week ending Saturday noon, Nov. 14th, 88. Males, 42—Females, 46.—Abscess (of neck), 1—accident, 1—apoplexy, 1—asthma, 1—inflammation of the bowels, 1—congestion of the brain, 1—disease of the brain, 2—cholera infantum, 2—consumption, 16—convulsions, 3—croup, 8—debility, 1—diarrhea, 1—diphtheria, 2—dropsy, 2—dropsy of the brain, 4—dyspepsia, 1—erysipelas, 1—typhoid fever, 3—hemoptysis, 1—disease of the heart, 4—intemperance, 1—disease of the kidneys, 3—lockjaw, 1—congestion of the lungs, 1—inflammation of the lungs, 5—old age, 2—paralysis, 2—peritonitis, 3—pleurisy, 1—puerperal disease, 1—sore throat, 2—syphilis, 1—teething, 1—thrush, 1—unknown, 5—suppression of urine, 1.

Under 5 years of age, 34—between 5 and 20 years, 7—between 20 and 40 years, 18—between 40 and 60 years, 13—above 60 years, 16. Born in the United States, 51—Ireland, 24—other places, 13.